

Abstract Submitted
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An Active Target- Time Projection Chamber (AT-TPC) for reaccelerated beams¹ SAUL BECEIRO-NOVO, T. AHN, NSCL, MSU, East Lansing, MI, F. ABU-NIMEH, LBNL 1 Cyclotron Road Berkeley, CA, D. BAZIN, J. BRADT, Z. CHAJECKI, A. FRITSCH, Z. KOHLEY, NSCL, MSU, East Lansing, MI, J.J. KOLATA, Department of Physics, Univ. of Notre Dame, IN, W. LYNCH, W. MITTIG, NSCL, MSU, East Lansing, MI, D. SUZUKI, Institut de Physique Nucleaire, Orsay, France, N. USHER, NSCL, MSU, East Lansing, MI — Reaccelerated radioactive beams near the Coulomb barrier, which will soon be available from the ReA3 accelerator at NSCL, will open up new opportunities for the study of nuclear structure near the driplines. Since these beams can only be produced at modest intensities, efficient techniques must be used for measurement. The Active Target-Time Projection Chamber (AT-TPC), which was developed at MSU, solves this problem by providing the increased luminosity of a thick target while maintaining a good energy resolution by tracking the reaction vertex over an essentially 4π solid angle. The AT-TPC and similar detectors allow us to take full advantage of the radioactive ion beams at present and future nuclear physics facilities to explore the frontier of rare isotopes where much of the spectroscopic information is unknown. We used a prototype of the AT-TPC to study resonances in light nuclei, and some illustrative results will be shown. The AT-TPC technology will be presented together with new experimental results and the commissioning of the detector and its 10240 electronic channels.

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